	Enrollm	ent No:	Exam Seat No:	-		
		C.U.SHA	AH UNIVERSITY			
	Summer Examination-2018					
	Subject 1	Name: Biochemistry				
	Subject Code: 4SC02BIC1		Branch: B.Sc. (Microbiology)			
	Semester	r: 2 Date: 07/05/201	18 Time: 10:30 To 01:30 Marks: 70			
	(2) I (3) I	Use of Programmable calculations written on main a	tor & any other electronic instrument is prohibited. Inswer book are strictly to be obeyed. es (if necessary) at right places. d.			
Q-1		Attempt the following que	stions:	(14)		
Atte	a) b) c) d) e) f) g) h) i) j) k) l) mpt any f	Define entropy Define Turnover Number Draw structure of any aromatic amino acid Name the subunits and number of amino acids presents in each subunit of Hemoglobin Name any two essential fatty acids Draw peptide bond between two amino acids Define epimer Write scientific name of any two fat soluble vitamins Deficiency of Vitamin B ₁₂ causes Define saponification Name any two membrane lipids Name any two Energy rich compounds Define zwitterion				
Q-2	a)b)c)	substrate to an enzyme Differentiate between Coen:	zyme and Isoenzyme giving example of each actures for the formation of a dipeptide when alanine a peptide bond.	(14) (7) (4) (3)		
Q-3	a)	Attempt all questions Differentiate between the a-	helix and b-sheet forms of secondary structure	(14) (7)		



Draw a structure of galactose molecule showing glycosidic bond.

Plot a graph between rate of reaction V/s substrate concentration for an Allosteric

b)

c)

(4)

(3)

Q-4		Attempt all questions	(14)
	a)	Differentiate between:	(7)
		i) Conformation and Configuration	
		ii) Reducing and non-reducing sugar	
		iii) Anomer and epimer	
	b)	What is the difference between glutamate and glutamine? Show by drawing the	(4)
		structure	
	c)	Calculate the standard Gibbs free energy change for the formation of methane	(3)
		from carbon and hydrogen at 298K.	
		Given the ΔH value is -74.9KJ/mol ΔS = -80.7J/K.mol	
Q-5		Attempt all questions	(14)
	a)	What assumptions were made for derivation of MM equation of enzyme kinetics?	(7)
		Derive Michaelis Menten equation.	
	b)	Write a note on sphingomyelins explaining the structure and function of	(4)
		cerebrosides and gangliosides	
	c)	Distinguish between lyases and ligases	(3)
Q-6		Attempt all questions	(14)
	a)	How does K _m and V _m changes in presence of a non competitive inhibitor? Where	(7)
		do lines intersect on a Lineweaver–Burk plot showing Non- competitive	
		inhibition? Show graphically.	
	b)	Write short note on water soluble Vitamins B	(4)
	c)	Define:	(3)
		i) Activation energy	
		ii) Active site	
		iii) First law of Thermodynamics	
Q-7		Attempt all questions	(14)
	a)	Write a short note on Polysaccharides	(7)
	b)	What are the different factors that affect velocity of enzyme catalyzed reactions	(4)
	c)	Explain the structure and function of hemoglobin	(3)
Q-8		Attempt all questions	(14)
	a)	The spontaneity of a biochemical reactions depends on Δ G. How the second law	(7)
		of thermodynamics helps us determine whether a process will be spontaneous?	
	b)	Explain the diseases due to deficiency of any two fat soluble vitamins	(4)
	c)	Describe the reaction mechanisms of bisubstrate reaction	(3)

